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10/668,763	09/23/2003	Xin Jin	555255012578	2548

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12/19/2005

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EXAMINER

LAU, TUNG S


ART UNIT

PAPER NUMBER

2863

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/668,763	Applicant(s) JIN ET AL.	
	Examiner Tung S. Lau	Art Unit 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 23,24,26-38,40-50 and 52-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23,24,26-38,40-50 and 52-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>See office action</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Information Disclosure Statement

1. Information Disclosure Statement filed on 11/21/2005 is acknowledged by the examiner; A copy of a signed PTO-1449 attached with this office action.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23, 26, 34, 35, 31, 32, 33, 36, 37, 40, 41, 44, 46, 47, 48, 49, 54, 55, 56

are rejected under 35 U.S.C. 102(b) as being anticipated by Rompe (U.S. Patent 5,903,856).

Regarding claim 23:

Rompe discloses a method of estimating a usable battery capacity for a mobile device, comprising: determining one or more operating condition of the mobile device (Col. 5-6, Lines 65-40), determining a present loaded battery voltage of the mobile device (Col. 6, Lines 17-28); determining a present unloaded battery voltage based on the present loaded battery voltage and one or more operating condition (Col. 6, Lines 8-55); determining a present battery capacity using the present unloaded battery voltage (Col. 6, Lines 17-28) ; determining a loaded operational threshold voltage of the mobile device (Col. 6, Lines 28-64), the loaded operational threshold voltage being a battery voltage below which an

FIG. 4

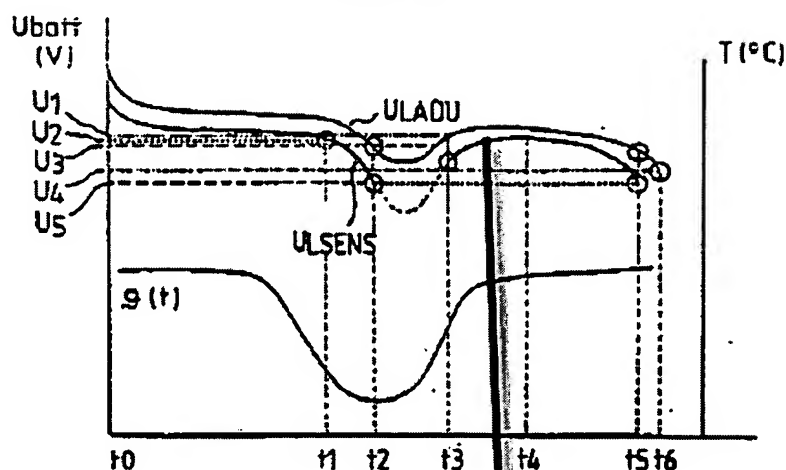
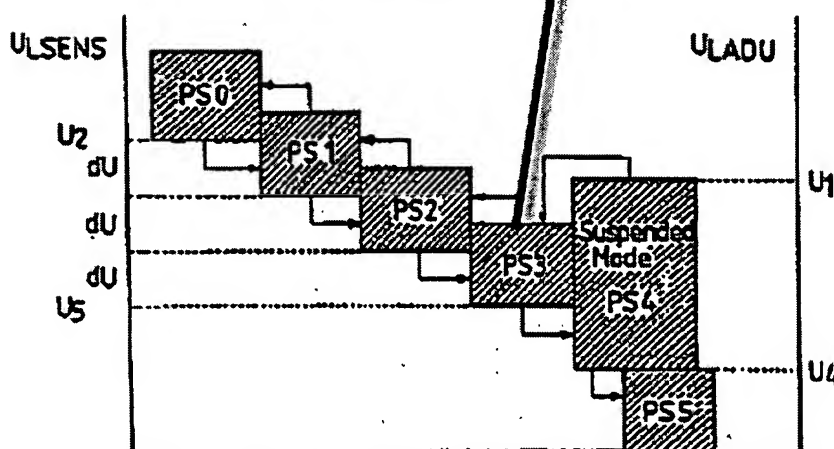


FIG. 5



operation of the

mobile device is shut off (fig. 5), and at least one operation of the mobile device remains operable (Col. 6-7, Lines 65-2); determining an unloaded operational threshold voltage of the mobile device based on the loaded operational threshold voltage and the one or more operating condition (fig. 4); determining an operational threshold capacity using the unloaded operational threshold voltage

(fig. 4), and estimating the usable battery capacity based on the present battery capacity and the operational threshold capacity (fig. 4, 5).

Regarding claim 37:

Rompe discloses a method of estimating the capacity of a battery to power a predetermined feature of a battery operated device, the predetermined feature operable when the battery is above a corresponding shut off voltage (fig. 5), the method comprising: measuring a battery voltage (fig. 4, 5); determining an unloaded battery voltage by translating the measured battery voltage to take into account a load on the battery (fig. 4); determining at least one shut off voltage by translating the shut off voltage to take into account the load on the battery (fig. 5, Col. 6, Lines 17-28); determining a battery capacity using the unloaded battery voltage (fig. 5); determining a shut off capacity using the unloaded shut off voltage (Col. 6, Lines 17-27, fig. 5); and estimating an estimated capacity for the predetermined feature as a difference between the shut off capacity and the battery capacity (Col. 6-7, Lines 48-14, fig. 4, 5); wherein the predetermined feature will shut off if the battery falls below the shut off capacity. And wherein at least one feature of the battery operated device will remain operational if the battery falls below the shut off capacity (Col. 6-7, Lines 48-23).

Regarding claim 48:

Rompe discloses a mobile device, comprising: a battery configured to power the mobile device, one or more sensor circuits configured to measure one or more operating conditions of the battery (fig. 3), a battery voltage measurement circuit

configured to measure a present loaded battery voltage of the battery (fig. 5); a battery capacity estimation program configured to (1) determine a present unloaded battery voltage based on the present loaded battery voltage and the one or more operating conditions of the battery (fig. 4), and (2) determine a present battery capacity using the present unloaded battery voltage (fig. 4, 5); the battery capacity estimation program being further configured to (1) determine a loaded operational threshold voltage of the mobile device, the loaded operational threshold voltage being a battery voltage below which an operation of the mobile device is shut off, but at least one operation of the mobile device remains operational (Col. 6-7, Lines 48-24) , (2) determine an the loaded operational threshold voltage of the mobile device based on the loaded operational threshold voltage and the one or more operating parameters (fig. 5), and (3) determine an operational threshold capacity using the unloaded operational threshold voltage (fig. 4); and the battery capacity estimation program being further configured to estimate a usable battery capacity based on the present battery capacity and the operational threshold capacity (fig. 4, 5,)

Regarding claim 26, Rompe discloses the mobile device includes a profile table that relates a plurality of battery profile values with the one or more operating conditions of the mobile device, and wherein the profile table is used to determine the present loaded battery voltage, the present battery capacity, the unloaded operational threshold voltage and the operational threshold capacity

(Col. 5, Lines 35-65); Regarding claim 34, Rompe discloses accessing the profile table to translate the operating condition into a battery profile value; adjusting the battery profile value by a correction factor to generate a corrected battery profile value (Col. 4, Lines 24-37); and using the corrected battery profile value to determine the present battery capacity and the operational threshold capacity (Col. 4, Lines 24-37, fig. 4, 5); Regarding claim 35, , Rompe discloses resistance of the battery (Col. 4, Lines 48-55) ; Regarding claims 31, 54, , Rompe discloses including temperature (Col. 6, Lines 17-28); Regarding claims 32, 55, Rompe discloses including current (Col. 6, Lines 48-55); Regarding claims 33, 56, , Rompe discloses including transmitting power of the mobile device (fig. 5); Regarding claim 36, Rompe discloses remaining time based on capacity (fig. 4, 5); Regarding claim 40, Rompe discloses determining a battery current delivered by the battery (fig. 4, 5); determining a predetermined threshold capacity corresponding to a battery capacity required to continue to deliver the battery current for a predetermined amount of time (fig. 4, 5); and comparing the estimated capacity to the predetermined threshold capacity (fig. 4, 5); Regarding claim 41, Rompe discloses identifying when the estimated capacity is less than the predetermined threshold capacity (fig. 4, 5); and in response to identifying that the estimated capacity is less than the predetermined threshold capacity (fig. 4, 5), triggering a predetermined action on the battery operated device (Col. 6-7, Lines 48-15, fig. 4, 5); Regarding claim 44, Rompe discloses the predetermined action is displaying the estimated capacity, the estimated capacity being

displayed in terms of the predetermined amount of time after which the predetermined function be shut off (Col. 6-7, Lines 56-14) ; Regarding claim 46, Rompe discloses determining a battery current delivered by the battery occurs at the time of the battery estimation (Col. 6, Lines 48-55); Regarding claim 49, Rompe discloses a profile table stored in one or more memory location on the mobile device and accessible by the battery capacity estimation program (abstract), the profile table relating a plurality of battery profile values with the one or more operating conditions of the mobile device (abstract); wherein the battery capacity estimation program is configured to use the profile table to determine the present unloaded battery voltage (fig. 4, 5), the present battery capacity (fig. 4, 5), the unloaded operational threshold voltage and the operational threshold capacity (fig. 4, 5); Regarding claim 47, Rompe discloses 47 determining an unloaded battery voltage by translating the measured battery voltage to take into account the load on the battery includes the step of determining at least one operating condition for the battery operated device selected from the group consisting of determining an effective serial resistance for the battery (fig. 4, 5), determining a temperature of the battery operated device (Col. 6, Lines 17-28) , applying a correction parameter, determining the transmit power, and determining an idle state (Col. 4, Lines 24-51).



***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

a. Claims 24, 38, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rompe (U.S. Patent 5,903,856) in view of Branham (U.S. Patent 4,297,639) .

Rompe discloses the method and device including the subject matter discussed above except use of radio wireless network, Branham discloses radio wireless network (Col. 1, Lines 20-39), in order to connect mobile devices for easy communication (Col. 1, Lines 20-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rompe to have the use of radio wireless network taught by Branham in order to connect mobile devices for easy communication (Col. 1, Lines 20-39).

b. Claims 27, 28, 29, 30, 42, 43, 45, 52, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rompe (U.S. Patent 5,903,856) in view of Weiss (U.S. Patent 5,949,219).

Rompe discloses the method and device including the subject matter discussed above except issue a warning, Weiss discloses issue a warning (Col. 2, Lines 14-

27), in order not to get stranded even having the mobile device (Col. 2, Lines 14-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rompe to have issue a warning taught by Weiss in order not to get stranded even having the mobile device (Col. 2, Lines 14-27).

***Response to Arguments***

4. Applicant's arguments filed 11/21/2005 have been fully considered but they are not persuasive.

A. Applicant argues in the arguments that the prior art does not show the 'means for measuring battery capacity'. Rompe discloses 'means for measuring battery capacity' in fig. 4 and 5.

B. Applicant continues to argues in the arguments that the prior art does not show the 'mean for calculating the unloaded battery voltage from measuring of the loaded battery voltage' Rompe clearly discloses 'mean for calculating the unloaded battery voltage from measuring of the loaded battery voltage' (Col. 6, Lines 8-55, Col. 6, Lines 17-28, fig. 5);

C. Applicant continues to argues in the arguments that the prior art does not show the 'determining a present unloaded battery voltage based on the present loaded battery voltage and one or more operating condition'. Rompe clearly discloses 'determining a present unloaded battery voltage based on the present loaded battery voltage and one or more operating condition' in fig. 4 and 5.

**D.** Applicant continues to argues in the arguments that the prior art does not show the 'determining a loaded operational threshold voltage of the mobile device'. Rompe clearly discloses 'determining a loaded operational threshold voltage of the mobile device' in fig. 4 and 5.

**E.** Applicant continues to argues in the arguments that the prior art does not show the 'determining an operational threshold capacity using the unloaded threshold voltage'. Rompe clearly discloses 'determining an operational threshold capacity using the unloaded threshold voltage' in fig. 4 and 5.

**F.** Applicant continues to argues in the arguments that the prior art does not show the 'estimating the usable battery capacity based on the present battery capacity and the operational battery capacity'. Rompe clearly discloses 'estimating the usable battery capacity based on the present battery capacity and the operational battery capacity' in fig. 4 and 5.

**G.** Applicant continues to argues in the arguments that the prior art does not show the 'determining an unloaded battery voltage by translating the measured battery voltage to take into account a load battery'. Rompe clearly discloses 'determining an unloaded battery voltage by translating the measured battery voltage to take into account a load battery' fig. 4 and 5 and Col. 6, Lines 17-28

**H.** Applicant continues to argues in the arguments that the prior art does not show the 'determining at least one shut off voltage by translating the shut off voltage to take into account the load on the battery'. Rompe clearly discloses

'determining at least one shut off voltage by translating the shut off voltage to take into account the load on the battery' in fig.4 and 5.

I. Applicant continues to argues in the arguments that the prior art does not show the "determining a battery capacity using the unloaded battery voltage,"

"determining a shut off capacity using unloaded battery voltage," or "estimating an estimated capacity for the predetermined feature as a difference between the shut off capacity and the battery capacity". Rompe clearly discloses "determining a battery capacity using the unloaded battery voltage," "determining a shut off capacity using unloaded battery voltage," or "estimating an estimated capacity for the predetermined feature as a difference between the shut off capacity and the battery capacity" in fig. 4 and 5. Rompe discloses the load sense voltage can be under any situation including condition of the battery in Col. 1, Lines 8-35.

J. Applicant continues to argues in the arguments that the prior art does not show every limitation in claim 48. Please refer to the above rejection in claim 48.

Reminds the applicant(s) that claims must be given their broadest reasonable interpretation consistent with the supporting description In re Hyett, 211 P3d 1367, 1372, 54 USPQ2d 1664, 1667 \*Fed. Cir 2000); When not defined by applicant in the specification, the words of a claim must be given their plain meaning. In other words, they must be read as they would be interpreted by those of ordinary skill in the art. > Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342, 60 USPQ2d 1851, 1854 (Fed. Cir. 2001).

The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). Attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration See MPEP § 716.01(c).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

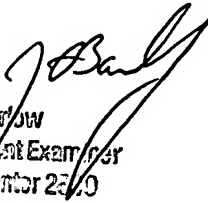
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

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John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TL

  
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